GROUND WATER PROTECTION COUNCIL

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Technical Achievements of Five DOE Grant Initiatives

Since 1991, the GWPC has administered DOE grant funds to the benefit of stakeholders in regulatory agencies, industry, and the public. A hallmark of the philosophy underlying the technical execution of these various initiatives is the GWPRF's "Cost Effective Regulatory Approach" (CERA), which consists of a collection of more effective and efficient policies and environmental program improvements that can be implemented by all state regulatory agencies.

The GWPC has applied the CERA framework to accomplish consistently successful technical work products that have in themselves fostered inter-agency cooperation at both state and federal levels and unprecedented data sharing opportunities with industry. The work products of five separate DOE grant initiatives can be cited as superb examples.

Risk Based Data Management System (Phases I and II)

The first program developed under CERA is the now-mature Risk Based Data Management System (RBDMS). Now in use in 20 states and one Indian Nation to manage oil and gas production and injection related activities and with additional states expressing interest, RBDMS allows agencies to improve regulatory decision-making, make oil and gas information more readily available to industry, increase environmental compliance, and reduce the regulatory barriers to oil and gas production. Attributes of RBDMS include its continued usefulness in assessing and reducing risk to drinking water, its use of nonproprietary software, its capability to address legacy databases, and its adaptation to variations in state oil and gas regulatory and production accounting methods.

Recently, an integrated base install and migration of legacy data was performed for the Alaska Oil & Gas Conservation Commission (AOGCC), thus adding the nation's largest oil-producing state to the list of integrated users of the RBDMS suite of products. This project included customization of the RBDMS application to meet the specific needs of the AOGCC.

Now, with the inception of RBDMS Phase II (*RBDMS Online*), making the wealth of information contained in these compatible databases available over the Internet and taking advantage of data formats and protocols developed under other grants creates an unparalleled opportunity for industry to have access to the full range of RBDMS reporting and analysis tools through a unified, user-friendly online portal.

Three Planned e-Commerce Achievements of RBDMS Online:

Data Mining: industry will be able to download whole datasets through agency Web services for in-house analysis and use.

Web-based Regulatory Reporting: industry will be able to automate oil and gas production and injection data reporting to agencies.

Electronic Permitting: industry will be able to apply for and to receive regulatory permits associated with their operations over the Web.

This project to standardize the data formatting and syntax requirements for permitting and reporting is streamlining the regulatory process and reducing the time and associated costs required for industry to comply with environmental regulations.

Enhance Domestic Oil & Gas Production and Ensure the Protection of the Environment

Interagency Data Sharing

The GWPC/GWPRF led this interagency initiative to develop an Internet-based data communication protocol for information associated with regulatory permitting and reporting. GWPC, the Bureau of Land Management (BLM), and Minerals Management Services (MMS) jointly developed a business case for schema development. The business case identified the procedures for pilot testing e-reporting and e-permitting programs to advance the schemas through the American Petroleum Institute's (API's) process for acceptance as industry standards. GWPC and BLM also developed a joint memo of understanding (MOU) that will guide future e-commerce applications at the state and federal levels. This work led directly to the development of in an XML (eXtensible Markup Language) schema governing basic permitting requirements.

State oil and gas agencies developed an XML schema for electronic production and injection reporting. This eReport schema, now in version 3.5, has been peer-reviewed by states, BLM, MMS, API and industry and is in use in six state agencies.

Thanks to work done under this grant, oil and gas companies now have increased access to energy exploration and production data on state Web sites. This data access reduces the cost of exploration and enables companies to develop properties in areas that would have been cost- prohibitive for exploration.

Class II State Peer Review

The GWPC State Underground Injection Control (UIC) Peer Review program gives state regulators the opportunity to audit peers who administer the same (or similar) regulatory programs. Both the reviewers and the reviewed have strongly endorsed the benefits of sharing the knowledge of how other agencies deal with specific issues. The completed review document provides a detailed assessment of the strengths and weaknesses of the agency. This feedback is valuable for advancing the target agency's program for ground water protection. GWPC recently conducted two Class II UIC State Peer Reviews in Montana and Arkansas. Results of Class II State Peer Review are available at www.gwpc.org/Data-Management/CERA.htm.

Transcending administrative boundaries through interagency networking has renewed and advanced the common goal of seeking new solutions to technical problems.

Coal Bed Methane Research

GWPC produced a manual titled *Feasibility Study of Coal Bed Methane Produced Water for Beneficial Use,* which is available at www.gwpc.org/Data-Management/CERA.htm. GWPC held its first produced water management conference in Colorado Springs, Colorado. The conference theme was "Making Water Produced during Oil and Gas Operations a Managed Resource for Beneficial Uses." Topics included innovative approaches to handling produced water from coal bed methane and conventional oil and gas production. The conference proceedings are available at www.gwpc.org/Data-Management/CERA.htm.

Facilitating Oil Industry Access to Federal Lands through Interagency Data Sharing

With this grant, GWPC and BLM are making more state and federal oil and gas data widely available. Phase 1 will allow industry to target efficiencies in exploration and production opportunities on federal lands and simplify its process for determining which leases to pursue. Also, operating rights often are assigned to third parties during leasing and lease bonus bid actions, and these third-party operators may not be aware of onsite conditions and stipulations. This work will give these third parties independent access to environmental data that may affect resource development. Federal and state lease stipulations in Colorado have been combined and are available at www.gwpc.org/Data-Management/CERA.htm.

Phase 2 is making an important start in reducing the cost of environmental compliance by developing a data format standard for electronic permitting. The XML schema developed for the application to drill is being expanded to include all permitted activities. This XML schema is being reviewed by states, API, BLM, MMS, POSC, and industry and will be the data transfer standard for all oil and gas regulatory activities. This data transfer standard will help to eliminate or reduce the duplicate permitting now required by some states on federal land.

Sharing data with industry eases access to the significant recoverable oil and gas resources in the federally held portions of the United States in two ways: (1) by facilitating production trend analysis across lease, state, federal, and other boundaries and (2) by making the regulatory process itself more open for analysis by industry and the public.

Produce More Oil and Gas via eBusiness Data Sharing

This project began the process of providing the ability to submit permit applications via the Internet, thereby allowing operators to better manage their wells and eliminating the need to duplicate their proposal to hardcopy.

This project, hosted by the California Division of Oil, Gas, and Geothermal Resources, will reduce the costs of regulatory compliance by automating routine regulatory reporting and permit notice review and by making it easier to exchange data with the oil and gas industry—especially small, independent operators. For such operators, the costs to develop additional oil plays are disproportionate to those incurred by larger companies with readily accessible data resources.

Operators are better able to manage their wells when a permit application can be submitted electronically. For example, if an operator's high-rate well goes down and a permit is required to put it back in operation, the operator can expedite the permitting process by submitting an ePermit application from the field and receive an immediate response from the Division that allows them to rework the well the same day it went out of commission. Therefore, the operator can quickly move a rig from a low-rate well to the higher-rate well, thereby putting more oil in the tank. The ePermit application also will reduce the permit "recycle" time, or the time it takes to submit a permit application and receive a permit. This normally takes 5 to 7 days via U.S. mail.

One California operator estimated that an automated permitting system for new drills and reworks could increase production from one of its larger oil and gas fields by 500,000 barrels per year.

The performance measures tracked in this project will demonstrate how e-commerce saves money, increases production, and promotes compliance with environmental regulations.

"Energy in the Environment" Initiatives 2004-08

Under this grant, RBDMS states will begin to implement performance measures designed to assess progress in oil and gas production and environmental protection and awareness. These measures were first identified in the 2005 annual report and will be incorporated into the states' RBDMS system. Statistics that will be electronically tracked and reported for each state may include the number of permits issued for oil, gas, and UIC wells; inspections; violations; enforcements actions; and releases to the environment. These reports will be the basis for the GWPC annual report on energy and environment that will debut in the spring of 2006.

Under this project, GWPC is expanding the RBDMS electronic commerce initiatives. The 2005 RBDMS Annual Report (http://www.gwpc.org/Data-Management/RBDMS.htm) provides statistics that show how these e-commerce initiatives save money and increase production. For example, nationwide, operators are now reworking many marginal wells and bringing them back online at a significant cost savings through new technology, re-drilling, or horizontal drilling. As a case in point, in North Dakota, more than 250 wells over the last 5 years have been re-entered and drilled horizontally. Before well information was readily available through the GWPC/GWPRF efforts, many of these wells would have been plugged or shut in. The cost savings to drill a well horizontally from an existing well rather than to drill a grass-roots well is estimated to be at least $300,000. By keeping these wells available, industry has saved in excess of $75,000,000 in North Dakota alone.